

Claims

1. A method of establishing a connection in a system in which a remote station is coupled to a central station by a network, the method comprising the steps of:

5 establishing, by the central station, a list of information about available network resources;

publishing, by the central station, the list for said remote station;

identifying, by said remote station, a set of said published resources needed to establish the connection;

10 notifying, by said remote station, the central station about the identified resources;

seizing, by said remote station, the set of identified resources to thereby establish the connection;

15 updating, by the central station, said list of available resources to thereby reflect the seizing of said set; and

communicating, by the central station, the updated list to said remote station.

2. A method according to claim 1, wherein:

the system comprises a plurality of remote stations coupled to the central station;

20 the plurality of remote stations are located in a plurality of geographic domains; and wherein, in regard to a particular said remote station:

the establishing step comprises establishing a list of information about available network resources for the particular domain in which the particular remote station is located;

25 the publishing step comprises publishing the list to those said remote stations located in said domain; and

the communicating step comprises communicating the updated list to said remote stations located in said domain.

3. A method according to claim 2, wherein the information about available network resources comprises identification of outbound and inbound channels, availability of channel capacity, and energy density of channels in the resource domain.
4. A method according to claim 2, comprising the further steps of:
adjusting the size of a said geographic domain; and
amending the corresponding list of information about available network resources for the particular domain to reflect the adjusted domain size.
5. A method according to claim 2, wherein the published list comprises information about more than one domain, and wherein the identifying step comprises the steps of:
determining the current geographic location of the remote station;
referencing a database of geographic domains with the determined location to identify the domain to which the remote station is to be associated; and
referencing the list of information with the identified domain to thereby establish which network resources are available for the particular domain.
6. A method according to claim 5, wherein the database of geographic domains is provided to the remote station when the remote station is manufactured.
7. A method according to claim 5, wherein the database of geographic domains is provided to the remote station before it is determined to establish the connection.

8. A method according to claim 5, wherein the database of geographic domains in provided to the remote station when it is determined to establish the connection.

9. A method according to claim 1, wherein the network is a satellite network and
5 the publishing step is performed using one of CDMA and TDMA modulation.

10. A method according to claim 1, wherein
the system comprises said plurality of remote stations coupled to a plurality of
central stations; and
10 a said remote station may transit between operation with one said central station
to any other said central station for which the remote station can receive incoming
communications fro the central stations.

11. A method according to claim 1, wherein:
15 the list of information is divided into at least one of static and dynamic
information;
the static information is published less frequently than the dynamic information.

12. A method according to claim 11, wherein the static information comprises, in
20 regard to inbound and outbound channels that are allocated for use in a resource domain,
at least one of frequency, timeslot, code sequence, turbo-coding rate, modulation type,
and Grade of Service.

13. A method according to claim 11, wherein the dynamic information comprises
25 information regarding the current status of the channel including at least one of channel
free, channel busy, and channel unavailable.

14. A method according to claim 5, wherein between the notifying and the seizing steps, the method comprises the further steps of:

determining, by the central station, if the notification collides with another
5 notification from another remote station; and

sending, by the central station, an acknowledgment to the notifying remote station, if no collision occurs; and wherein

the seizing step is performed only if the acknowledgment is received by the remote station.

10

15. A method according to claim 14, wherein:

the step of identifying, by the remote station, a set of published resources needed to establish the connection comprises identifying an inbound CDMA channel characterised by a frequency and a code;

15

the step of notifying, by said remote station, the central station about the identified resources comprises initiating, over the identified inbound channel, a PPP session establishment comprising an address of the remote station and a resource notification comprising an identification of the inbound channel; and

the step of sending, by the central station, an acknowledgment to the notifying
20 remote station, if no collision occurs comprises sending a PPP acknowledgment.

16. A method of allocating resources by a central station in a system in which a remote station is coupled to the central station by a network, the method comprising the steps of:

25 establishing, by the central station, a list of information about available network resources;

publishing, by the central station, the list for said remote station; whereby when the remote station sends a notification regarding the seizing, by the remote station, of a set of resources in the list to the central station, the method comprises the further steps of:

updating, by the central station, said list of available resources to thereby reflect
5 the seizing of said set; and
communicating, by the central station, the updated list to said remote station.

17. A method according to claim 16, wherein

the system comprises a plurality of remote stations coupled to the central station;
10 the plurality of remote stations are located in a plurality of geographic domains;
and wherein, in regard to a particular said remote station:

the establishing step comprises establishing a list of information about available network resources for the particular domain in which the particular remote station is located;

15 the publishing step comprises publishing the list to those said remote stations located in said domain; and

the communicating step comprises communicating the updated list to said remote stations located in said domain.

20 18. A method of obtaining resources, by a remote station, in a system in which the remote station is coupled to a central station by a network, and wherein the central station performs the steps of establishing a list of information about available network resources, and publishing the list for said remote station; the method comprising, in regard to the remote station, the steps of:

25 identifying a set of said published resources needed to establish the connection;
notifying the central station about the identified resources; and

seizing the set of identified resources to thereby establish the connection.

19. A communications system in which a remote station is coupled to a central station by a network, the system comprising:

5 the network;

the central station which comprises:

means for establishing a list of information about available network resources; and

means for publishing the list for said remote station;

10 the remote station which comprises:

means for identifying a set of said published resources needed to establish the connection;

means for notifying the central station about the identified resources;

and

15 means for seizing the set of identified resources to thereby establish the connection; wherein

the central station further comprises:

means for updating said list of available resources to thereby reflect the seizing of said set; and

20 means for communicating the updated list to said remote station.

20. A communications system according to claim 19, wherein the system comprises a plurality of remote stations coupled to the central station, and the plurality of remote stations are located in a plurality of geographic domains; and wherein in regard to said
25 central station:

the establishing means comprise means for establishing a list of information about available network resources for a particular domain in which a particular remote station is located;

the publishing means comprise means for publishing the list to those
5 said remote stations located in said domain; and

the communicating means comprise means for communicating the updated list to said remote stations located in said domain.

21. A central station, adapted for operation in a system in which a remote station is
10 coupled to the central station by a network, the central station comprising:

means for establishing a list of information about available network resources;

means for publishing the list for said remote station;

means for updating said list of available resources to thereby reflect seizing of a set of resources in response to a notification from the remote station regarding the seizing
15 of said set of resources in the list; and

means for communicating the updated list to said remote station.

22. A central station according to claim 21, wherein the system comprises a plurality of remote stations coupled to the central station, and the plurality of remote stations are
20 located in a plurality of geographic domains, and wherein:

the means for establishing comprise means for establishing a list of information about available network resources for the particular domain in which a particular remote station is located;

the means for publishing comprise means for publishing the list to those said
25 remote stations located in said domain; and

the means for communicating comprise means for communicating the updated list to said remote stations located in said domain.

23. A remote station, adapted for operation in a system in which the remote station is coupled to a central station by a network, and wherein the central station performs the steps of establishing a list of information about available network resources, and publishing the list for said remote station; the remote station comprising:

means for identifying a set of said published resources needed to establish the connection;

10 means for notifying the central station about the identified resources; and

means for seizing the set of identified resources to thereby establish the connection.